Napa Valley Transportation Authority

Santa Rosa City Bus

Petaluma Transit

Fairfield and Suisun Transit

Request for Information (RFI) for

Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System

RFI Number: NVTA No. 20-07

IMPORTANT DATES

Date Issued: October 15, 2020

Deadline for Questions/Clarifications: October 21, 2020

Answers to Questions/Clarifications Posted: October 23, 2020

RFI Response Deadline: November 5, 2020

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SUMMARY

The Napa Valley Transportation Authority (NVTA), Santa Rosa City Bus, Fairfield and Suisun Transit (FAST), and Petaluma Transit are ("AGENCIES") gathering information that will facilitate a formal solicitation for a Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system. Responses to this RFI will help the AGENCIES identify a short list of vendors that have products that match the Authority's needs. It will be to this list of vendors that the RFP will be distributed. As an identified CAD/AVL provider, the AGENCIES invite your firm to respond to this RFI.

Requests for Clarification and/or questions should be directed to the project manager via email at kmiller@nvta.ca.gov by October 21, 2020. Please include the RFI Number in the subject line.

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1. Agency Descriptions and Background

1.1 General Information

The following agencies all have an interest in procuring computer-aided dispatch/ automatic vehicle location (CAD/AVL) systems for fixed route services via a future solicitation:

- Fairfield and Suisun Transit (FAST), City of Fairfield, California
  https://fasttransit.org/about-us/
- Napa Valley Transportation Authority (NVTA), Napa County, California
  https://www.nvta.ca.gov/about-us-page
  https://vinetransit.com/
- Petaluma Transit, City of Petaluma, California
  https://transit.cityofpetaluma.net/
- Santa Rosa CityBus, City of Santa Rosa, California
  https://srcity.org/1036/Transit-and-CityBus

The AGENCIES are cooperating on the procurement but are independent of each other and may ultimately make individual design decisions and establish separate contracts with the selected contractor.

1.2 Rights of Parties

This RFI does not commit the AGENCIES to issue a subsequent Request for Proposals (RFP), nor to enter into a contract, nor does it create any obligation to pay for any costs incurred in preparation and submission of vendor responses or in anticipation of a contract.

RFI responses will be reviewed by the agencies named above. All material submitted will be held confidentially to the extent possible. Submitters are cautioned to clearly label as proprietary and confidential any specific information or other material that is considered to be confidential. Note that materials are subject to Freedom of Information Act (FOIA) requests.

Bids received during the RFP process will be rejected unless the bidder has also submitted a response to the RFI.

1.3 Schedule

The AGENCIES intend to move as quickly as possible through the RFI process to RFP, to issue a contract and implement the project. This RFI's planned schedule is detailed on the cover page. We expect that RFI response evaluations will be completed in November. An RFP should follow shortly thereafter.

The Metropolitan Transportation Commission's (MTC's) regional Clipper 2 transit fare payment card project [https://www.futureofclipper.com/] is driving this project's schedule. It calls for agency CAD/AVL systems to be ready for C2 Operational Integration Systems Testing (OIST) in spring 2021 with production go-live in fall 2021. A tentative schedule is shown below.

RFI Release	Release Date	Due Date
RFI Submittals	October 15, 2020	November 5, 2020
RFI Evaluation	November 6, 2020	November 3, 2020
RFP Release Date (Tentative)	November 20, 2020	November 20, 2020
RFP Submittals Due (Tentative)	December 11, 2020	December 9, 2020
RFP Evaluations Completed (Tentative)	December 9, 2020	December 15, 2020
Award Contract (pending BIFA and agency schedule)	December 16, 2020	December 16, 2020

1.4 Vehicles and Service Description

The four agencies primarily offer fixed routes in their respective service areas. Vine also operates demand-responsive service in certain jurisdictions in addition to or instead of fixed route.

No formal service touchpoints exist between the four agencies. Any eventual procurement by multiple agencies is purely for convenience and cost-effectiveness, service integration is not required. Indeed, data privacy between systems is essential; each agency's staff must be unable to see or modify another agency's configuration or data.

Three agencies contract out all or part of their fixed-route service operations; Santa Rosa CityBus does not. Santa Rosa also does not have a formal Dispatch function and has no need for CAD, only AVL.

All fixed-route vehicles are agency-owned as is most of the onboard equipment.

This table provides numerical attributes of the fixed-route service provided by each agency. See *Appendix A* for more detailed fleet information.

Agency	NVTA	FAST	Petaluma	SR CityBus
# FR coaches	41	48	14	29
# ADA Vehicles	16	12		
Peak FR vehicle pullout	33	29	9	24
# fixed routes	14	10	6	16
# bus stops	373	261	180	330

1.5 Existing Technology

Napa Vine, Petaluma Transit, and SR CityBus, currently use Avail Technologies' CAD/AVL system via a 2014 procurement by SolTrans. FAST uses NextBus as a vehicle location system.

Voice & Data Communications: All four agencies use radios for voice communications and 4G cellular data connections for Avail. These radios are expected to be incorporated into the new CAD/AVL system.

MDCs: The three agencies using Avail's system use their mSlate 4G tablets plus some Xenarc displays.

Onboard Integration: The three agencies using Avail's system all have their IVU or IEB installed.

Fareboxes: Petaluma Transit has primarily Diamond fareboxes, the other four agencies all have GFI Genfare Odysseys.

APCs: Napa Vine uses UTA's model 30 IR system, all others use InfoDev DA-2300 door sensors and communications gateways.

Headsigns: All four agencies use various Luminator and/or Hanover models.

Cameras/DVRs: Agencies use a variety of REI BusWatch, MobileView, SEON, and TSI hardware.

WLAN in Bus Yards: All agencies have WiFi access points in their bus yards. FAST, Petaluma Transit and SR CityBus all indicate that theirs are insufficient; they'll need to be upgraded or replaced before the CAD/AVL project begins. NVTA will break ground on a new bus maintenance facility in 2021 and will want to upgrade its WLAN.

Scheduling system: NVTA and FAST (for some) use GIRO HASTUS, SR CityBus uses Schedule Masters, and both Fairfield and Petaluma use Excel.

Onboard hardware that is **expected to be replaced** under a subsequent CAD/AVL procurement includes: Avail mSlate and Xenarc display, Avail IVU/IEB, and potentially also GPS receivers and AVA equipment.

Hardware that is ***not* expected to be replaced** includes radios, headsigns, fareboxes, APCs, cameras, and DVR systems.

2. Goals

The purpose of this project is to find a CAD/AVL system that advances the AGENCIES' ability to make safer, more reliable, and more timely transit service decisions. Ultimately, the objectives of the project are to provide better service management, better asset performance, better customer information, and better operational plans and schedules through a set of integrated technologies. The operational goals for the CAD/AVL system include:

- *Improve Dispatch Reliability and Efficiency* - By disseminating real-time information to the dispatchers, much of the current communications used to determine where a transit vehicle is located, how full the vehicle is, and who is driving will be eliminated. With real-time information at their desk, dispatch operators could provide this information quickly to transit agency supervisors, respond to public inquiries more proactively and make necessary adjustments.

- *Improve On-time Performance* - The AVL system shall disseminate continuous, real- time information to drivers to speed up or slow down between established time points and provide transit planners with systematic schedule adherence problems on routes, due to factors such as peak hour congestion and periodic increased passenger loading throughout the day. With this information, planners will be able to adjust routes or schedules accordingly. The system will also provide flexibility to set and adjust the parameters for on time performance.

- *Increase Ridership* - By improving on-time performance, automating on-board announcements and signs, and to make transit more user-friendly by enabling 511 Transit and third-party vendors to produce mobile applications. Increasing the availability of real-time information to transit riders will allow them to plan for upcoming trips, select specific stops to find real time departures, and set alarms for upcoming departures. (Napa Vine uses DoubleMap to deploy on demand services.)

- *Improve Scheduling and Planning* - By providing more accurate data and more flexible access to it, allowing easier analysis and the development of more realistic schedules. The CAD/AVL system should provide robust access to a historical database which enables planners and transit analysts to select more effective bus stop placements, to create more realistic schedules, and to generate more accurate ridership counts.

- *Improve Data Management and Reporting* - By automating data collection and improving the accuracy and accessibility of data for transit operators, transit planners, and National Transit Database (NTD) passenger mile reporting.

With this RFI, the AGENCIES seek to identify qualified vendors of CAD/AVL products with the following attributes:

- Tested product that provides the full range of CAD/AVL functions.

- Supports both scheduled and demand-response fixed route transit service with integrations through HASTUS, Schedule Masters, Excel, Trapeze and any additional relevant scheduling software.

- Includes a complete *schedule import* capability from GIRO HASTUS and Schedule Masters fixed-route scheduling systems. Ideally would also include a basic scheduling capability (to replace at least Excel) for those agencies that choose to use it.

- Available as a *licensed-and-hosted or Software-as-a-Service* product with cloud-based servers. All server procurement, implementation, maintenance, update and support should be included in the cost of the product. AGENCIES have limited access to Information Technology (I.T.) staff and wish to minimize on-site computer hardware & software.

- Provides a *web application and/or Microsoft Windows client* for Administrators, Schedulers/ Dispatchers, and Controllers.

- Includes a robust and flexible *data reporting* system with both predefined and ad hoc reporting capabilities.

- Supports a color touchscreen *tablet or MDC driver interface*. A removable tablet would be ideal as it would support pre-trip inspections and easy, cost-effective replacement.

- Supports integration with both GFI Odyssey and Diamond *fareboxes*.

- Supports integration with and real-time transmission to transit center *real-time signage*.

- Capable of informing passengers of arrivals/departures by bus bays at transit center and integrating that information with *real-time signage*.

- Supports integration with and over-the-air message updates to Luminator and Hanover *headsigns and internal bus electronic signage*. This includes variable messaging through signage as buses are in operation doing various functions (display bus route name, destination, safety messaging, bus stop names based upon vehicle location, custom messaging, etc).

- Supports integration with and over-the-air message updates to onboard audible annunciator or *Automatic Vehicle Announcement (AVA)* systems to be able to provide pre-programmed and driver activated announcements (bus stop names, safety messaging).

- Supports integration with both real-time (emergency) transmission via cellular data and end-of-day transmission via WLAN of onboard *camera video*.

- Supports integration with and the real-time transmission of data from *APC equipment*.

- *Simple User Interface and System Login* – Ease of access to operating data and simplified and usable reports for planning staff is highly desirable.

- Operator interface should be easy to read. Operator logon should be automated through card reader or proposed simplified method.

- Supports operator *single-point logon* via the MDC/tablet for connected devices. Includes an MQTT Broker in support of Clipper fare payment system integration.

- Supports the easy export of vehicle location data compliant with the *GTFS-RT* specification. Ideally includes a tested export of vehicle location data to the Metropolitan Transportation Commission's (MTC's) *511 Transit* program and/or Google.

- Provides a real-time app that is aligned with agency branding and agency customer-support/feedback with bus arrival and location information.

- Informed, experienced and responsive *product support* staff based in North America, available 24x7 via phone and email to assist with operation, configuration, reporting and troubleshooting.
    - Having support staff permanently based out of the Pacific Time Zone is strongly preferred.

- A strong history of continued *product development* and enhancement.

- Remote driver login - when dispatch sees the driver has not logged in or logged in incorrectly, they would like to log the driver/route information into the system or correct the login information.

- Ability to log off and log on mid-trip changes - when the shift change is mid-route.

- Ability to alter/edit the dispatch log – when dispatch is busy some of the information on the log cannot be completed when the transaction occurs – dispatch would like to refine information later but the current log cannot be altered.

- Driver control unit locks when vehicle is in operations – request ability to (press button) trigger annunciator announcements when vehicle is in operation – currently the system doesn't allow that to happen when the vehicle is operation.

- System version upgrades need to be thoroughly tested before implementing to make sure that it works with all existing components (farebox, head signs, annunciators, etc.).

- Ability for data-messaging from dispatch to drivers (to minimize radio communications).

- Connectivity to Trapeze for ADA vehicles.

- Ability to see which version of the program has been downloaded and is in use.

- Hardwired displays in lieu of tablets (M-plate-Operator control unit).

- Ability to network with 4G equipped tablets that can be used by road supervisors in the field to interface with system.

- Ability to upgrade to 5G without additional cost (currently or conceptually for future).

- Ability to support on-board *public-facing Wi-Fi* for riders with a singular modem to accommodate both CAD/AVL and Wi-Fi feeds.

- *Referenceable customers* with positive views of the company, products and support.

3. Questions for Vendors

This section outlines the AGENCIES' questions for proposers. Our intent is to solicit information specific enough to determine your product's actual capabilities in order to evaluate its suitability to our needs. Please avoid voluminous, general responses that do not specifically answer the questions asked. If your system doesn't offer a feature requested, this should be clearly stated—no one system does it all, and we'll be looking at aggregate capabilities. A question at the end of each of the three sections below invites you to provide additional relevant information.

All agencies wish to minimize project costs and to maximize the value of hardware and software they already own. But they may also be willing to change in areas where reduced cost and maintenance or increased functionality are possible. Where your product is compatible with existing agency hardware (for example, APCs, GPS receiver) but you also offer an alternative solution, describe both in terms of pros & cons.

When responding to these questions, please maintain this numbering scheme in your response documentation.

3.1 General

1. Briefly state your company's history and experience with a focus on your CAD/AVL product(s).

   A:

2. Describe your CAD/AVL system's areas of functionality. Which do you consider its strengths? Its weaknesses? (Be forthcoming, every system has some.)

   A:

3. With what other companies do you typically partner to implement a CAD/AVL system, and why?

   A:

4. Describe your approach to setting up and managing cloud servers for a new customer. How do you inform your engineering and technical support teams about a new customer and their unique characteristics or requirements?

   A:

5. If you're willing to share it, attach or include a date-based list of features added to your system in order to demonstrate previous and continued active product development.

   A:

6. List the typical project implementation phases and timeframes for each.

   A:

7. Describe your typical approach to training both operations staff and drivers. What portion is in-person vs. remote? Is recorded video training available permanently for remedial training or introducing staff hired later?

   A:

   Describe end-user support policies, services and capabilities, including availability of support staff, number of support staff dedicated to your application, availability of service level reporting, and response time for high priority issues. Does your company have a support website or portal?

   A:

8. Please list your primary company location(s) and what staff or offices would be responsible as primary point of contact for services.

   A:

9. List five of your most recent CAD/AVL customers and something unique or challenging about each project.

   A:

10. List at least three referenceable customers and a key contact at each (preferably San Francisco. Bay Area transit operators).

    A:

11. What else should we know about your company and its CAD/AVL system?

    A:

3.2 Hardware

12. Given our need for significant onboard system integration, describe the MDT/MDC or tablet and VLU configuration you typically propose for clients with similar requirements. What standard

connections does it support? Is your system agnostic regarding MTC/MDC/Tablet hardware integration or are required units proprietary?

A:

13. Describe your system's integration with vehicle headsigns. With which headsign equipment brands and models do you have a standard, tested integration in place?

    A:

14. Describe your system's integration with AVA equipment. With which AVA equipment brands do you have a standard, tested integration in place?

    A:

15. Describe your system's integration with APC equipment. With which APC equipment brands do you have a standard, tested integration in place?

    A:

16. Describe your system's audible announcement capabilities, integration with onboard equipment, and system functionality.

    A:

17. Describe your system's integration with onboard security cameras & DVRs. With which camera system providers do you have a standard, tested integration in place? Does your system facilitate end of day video upload via VLAN? Does it support real-time video upload via cellular data following an Emergency Alarm?

    A:

18. Describe your system's integration with Transit Signal Priority (TSP) emitters. With what brands/equipment is your system compatible?

    A:

19. Describe your system's options for outputting both schedule and operational (real-time) data to public information displays, signs, and apps or websites. What events & data are included (e.g. detours, delays, stops not in service)? What public signage do you propose or resell? Which which brands/systems of real-time signage is your system compatible?

    A:

20. Some agency vehicles have existing Mobile Access Radio (MAR) units. Can your system use these for your CAD/AVL data communications? If it's also used to provide onboard public WiFi, how would you ensure the security of your system's data?

    A:

21. How are software and firmware updates pushed out to MDT/MDC/tablets?

    A:

22. What else should we know about your CAD/AVL system hardware?

    A:

23. Is your system able to provide on-board public facing wi-fi for customers? Please describe this functionality and how it relates to hardware and software installed (i.e. are modems dual-sim card units that allow for separate data streams?). Are separate modems required for this vs CAD/AVL system

    A:

24. What are the various option for the "hosting" of your system (i.e. on-site server at Transit agency depot, company owned remote servers, third party remote servers.) Please describe them briefly.

    A:

3.3 Software and Reporting

25. Describe your system's ability to administer both scheduled fixed route service and demand-responsive fixed-route service. Can operations (Dispatch) workstations support both modes at once on different routes? Can your system's on-board software manage both modes, and how does it transition from one to the other?

    A:

26. Describe your system's Windows or web application for administrator, operations and dispatch staff. What functional areas does it support? Which areas do you consider its strengths?

    A:

27. Which mapping engine does your system use? How and how often are base map updates applied? What filtering and display options are available to modify map modes and detail and to show or hide coaches in different statuses?

    A:

28. Are Controllers able to create, delete and change map views and other configuration settings specific to their log-on profile?

    A:

29. Describe how your system allows the distribution of work among Controllers. Does it support configurable groups of routes, service types, geographic area, operational function, vehicle ID, blocks, routes or trips, with all data associated with a block, or trips on that route being directed to particular Controllers?

    A:

30. Describe your system's fixed-route scheduling system capability. Please describe any embedded scheduling functionality within your system and import capabilities from third party scheduling software. Have you previously implemented CAD/AVL with integration to both GIRO's HASTUS and to Schedule Masters?

    A:

31. How does your system assign buses to blocks and operators to runs? What options are available to communicate these assignments to operations and maintenance staff? (e.g., reports, displays/kiosks, email, text...)

    A:

32. Describe your system's ability to support Operator single-point logon to other onboard systems by providing some combination of operator and vehicle identification, route, run, block, and trip ID parameters. Onboard systems currently in use or planned for deployment with the transit agencies participating this RFI include:

    - Fareboxes,
    - MTC's Clipper C2 fare payment system,
    - Voice radios,
    - Headsigns,
    - APC equipment, and
    - AVA equipment.

    A:

33. Does your system support single-point logon for these types of onboard systems via uni-directional and/or bidirectional data exchanges over Ethernet using the MQTT network protocol?

    If yes, please provide examples of external systems you support with single-point logon, including descriptions of the associated functions and data parameters involved (may include projects currently in development that have yet to be deployed.)

    If no, please describe the work that would be needed to incorporate this functionality.

    A.

34. What other data exchange standards and protocols are supported for integration with onboard hardware (SAE J1708 and J1939 are a couple of examples if specifics are needed)?

    A:

35. Describe your system's features allowing Controllers to monitor and address schedule adherence and overall service performance.

    A:

36. What features does your system offer to accommodate both planned and ad hoc (real-time) service detours? Do they support both manual and automatic re-routing? How are bypassed bus stops handled? What staff and passenger notification methods are provided?

    A:

37. Describe your system's ability to detect and adjust for turn-backs within a service block.

    A:

38. Describe your system's predefined messaging features between Controllers and Operators.

    A:

39. Describe your system's radio integration and how voice calls are handled.

    A:

40. Describe how your system responds to an operator-initiated Emergency Alarm.

    A:

41. Describe your system's analytical tools, and pre-built & ad hoc reporting systems. Are operational databases, or mirrored copies of them, accessible by third-party analytical & reporting tools?

    A:

42. Please also respond to the following specific system reporting questions.

    - Provide a sampling of reports generated through any included analytical/reporting systems. If possible please provide a list of various reports available to be run through the platform.

      A.

    - What reports does your system produce, and what are the available parameters? For example, does your system provide reports by route and by stop that easily and accurately reflects average daily ridership by weekday or by Saturday.

      A.

    - What reports does your system have to pull/report data for pass counts at a bus stop for a selected time period – at the date and time level – and by route if served by more than one route.

      A.

    - Do your system reports pull data for pass counts at a bus stop for pre-defined monthly periods (January 1-31, October 1-31, etc.)? If not, would your system be able to customize a report with this information?

      A.

- Do your system reports pull data for on-time performance for arrival/departure times at bus stops route for a selected time period (by date and time)?

  A:

- Agencies want to be able to address what time a bus arrived and departed on a specific route and have the report reflect whether each stop was on time and what was cumulative on-time performance for a route for a designated time period (by specific day, week, month, quarter, and year) Does your system report on-time performance report in this manner by **bus stop** and have the ability to query any bus stop based on agency standards (e.g., departure within 0-2 minutes is on-time, departing any time before timepoint is early, and be able to query by date and time of day)?

  A:

- Does your system report on-time performance report by **route** based on agency parameters (e.g., departure within 0-2 minutes is on-time, departing any time before timepoint is early, and be able to query by date and time of day?

  A:

  Does your system have a report showing early arrivals to specific bus stops? The report's purpose would be to flag early arrivals as it is an indication there is slack in the schedule and drivers have to wait for their departure time. This information would be used for planning purposes only and would need to be calculated separate from on-time performance.

  A:

- What back-end report customization options does your system provide? How customizable are each of your system reports? Please be specific.

  A:

43. Describe your system's integration capabilities with an enterprise asset management or maintenance system. If none, how would you export vehicle powertrain data from a J1708/J1939 interface to an external maintenance system such as Assetworks FASuite? Can your onboard system set thresholds above which a data item is transmitted in real-time rather than end of day, for example if a high oil temperature is detected?

    A:

44. Does your system include functions for Pre-Trip Inspection, or to report maintenance/ mechanical issues? Describe the ability of the client to personally or through your system personalize pre-trip inspections and what items are included.

    A:

45. Does your system include a ‘white-label’ mobile app or web pages that can be branded and used by NVTA and partner agencies to display both schedule and operational data, including stop arrival predictions, to riders?

    A:

46. Describe your system’s integration with fuel monitoring systems (FMS, e.g. FleetWatch, Amply Power). With which FMS products do you have a standard integration in place?

    A:

47. Describe your system’s ability to generate stop arrival predictions, and/or its integration with external stop arrival prediction systems (e.g., Swiftly, NextBus).

    A:

48. Are clients able to detect when a software update is due or has been “pushed” to vehicles? If so, how is this info portrayed (i.e. advanced notice of updates, or ability to view software version numbers via on board MDT units.)

    A:

49. What else is unique about your CAD/AVL system software, any bells and whistles that set it apart from your competitors that would be of benefit specifically to a small transit system?

    A:

Appendix A
Glossary

APC	Automatic Passenger Counter
API	Application programming Interface (used primarily for 3rd-party integrations)
AVA	Automatic Voice Announcement system for voice annunciation of service messages & upcoming stops
CAD/AVL	Computer-Aided Dispatch/Automatic Vehicle Location
Clipper	The San Francisco Bay Area's regional transit fare payment card system; may refer to Clipper ver. 1, live since 2010, or Clipper 2, due in late 2021
DVR	Digital Video Recorder
FMS	Fuel Monitoring/Management System
FOIA	Freedom of Information Act
FR	Fixed-Route
GPS	Global Positioning System
GTFS	General Transit Feed Specification
GTFS-RT	General Transit Feed Specification-Real Time
IEB	Interface Expansion Box
IVR	In-Vehicle Router/Gateway
IVU	Integrated Vehicle (Logic) Unit
LAN	Local Area Network
MAR	Mobile Access Radio
MDC	Mobile Data Computer (aka MDT)
MDT	Mobile Data Terminal (aka MDC)
MQTT	MQ Telemetry Transport network protocol
MTC	Metropolitan Transportation Commission
NTD	National Transit Database
RFI	Request for Information
RFP	Request for Proposal (formal solicitation)
TSP	Transit Signal Priority
VLU	(Integrated) Vehicle Logic Unit
WLAN	Wireless Local Area Network

Appendix B
Fleets by Agency

Napa Valley Transportation Authority

Vehicles				Automatic Passenger Counters (APC)	Automatic Voice Annunciators (AVA)		Farebox	Headsign	Cameras/DVR
Qty	Make	Model Year	Model	System Installed?	Microphone/ PA System	AVA Installed?	Make/Model	Make/Model	Make/Model
6	Gillig	2002, 2003	Phantom	UTA model 30	Yes	Yes	Genfare Odyssey	Luminator	TSI-CAM-00007/ TSI-XDMR Series
11	El Dorado	2013, 2016	40’ diesel	UTA model 30	Yes	Yes	Genfare Odyssey	4 Luminator 7 Hanover	TSI-CAM-00007/ TSI-XDMR Series
8	El Dorado	2013, 2016	35’ diesel	UTA model 30	Yes	Yes	Genfare Odyssey	6 Luminator 2 Hanover	TSI-CAM-00007/ TSI-XDMR Series
5	El Dorado	2013	35’ CNG	UTA model 30	Yes	Yes	Genfare Odyssey	Luminator	TSI-CAM-00007/ TSI-XDMR Series
6	Chevy	2011, 2012	28’ Arboc	UTA model 30	Yes	Yes	Genfare Odyssey	Luminator	TSI-CAM TSI-XDMR8
5	BYD*	2021	30’ electric	UTA model 30	Yes	Yes	Genfare Odyssey	I/O Controls	TSI-CAM-00007/ TSI-XDMR Series
22	Ford**	2004, 2007, 2008, 2011, 2012, 2014, 2016	Paratransit Cutaway	N/A	No, except for six Glavals	Yes	Genfare Odyssey	19 Luminator 3 Hanover	TSI-CAM-00007/ TSI-XDMR Series
4	El Dorado**	2011	Aerolight Cutaway	N/A	Yes	Yes	Genfare Odyssey	Luminator	TSI-CAM-00007/ TSI-XDMR Series
2	Supreme/ Hometown	2000 & 2012	Trolley	No	Yes	Yes	No	Luminator	TSI-CAM-00007/ TSI-XDMR Series
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*- on order, expected late 2021-2022

** - Due to low spare ratio, cutaways are occasionally used in fixed route service

Communications: Motorola XTL 2500 radio, 4G cellular data modem

MDC/VLU GPS receiver: Garmin/Can310

Mobile Access Router: Digi/Transport WR64

Fairfield-Suisun Transit (FAST)

Vehicles				Automatic Passenger Counters (APC)	Automatic Voice Annunciators (AVA)		Farebox	Headsign	Cameras/DVR
Qty	Make	Model Year	Model	System Installed?	Microphone/ PA System	AVA Installed?	Make/Model	Make/Model	Make/Model
8	Gillig	2002 & 2003	Phantom	InfoDev DA-200, GW-200	Hanover	Hanover	Genfare Odyssey	Hanover	REI HD800 & BusWatch 700636FM
14	Gillig	2007, 2009, 2011	Low Floor	InfoDev DA-200, GW-200	Hanover	Hanover	Genfare Odyssey	Hanover	MobileView 3/3000 and REI
7	Gillig	2013	Hybrid	InfoDev DA-200, GW-200	Hanover	Hanover	Genfare Odyssey	Hanover	Mobile View 3000
19	MCI	2003 & 2018	D4500 Commuter	InfoDev DA-200, GW-200	Hanover	Hanover	Genfare Odyssey	Hanover	Mobile View 3000
48									

Communications: Motorola XTL 2500 radio
MDC/VLU GPS receiver: NextBus
Mobile Access Router: Cradlepoint IBR1100 and IBR 900 installed only on MCIs

Petaluma Transit

Vehicles				Automatic Passenger Counters (APC)	Automatic Voice Annunciators (AVA)		Farebox	Headsign	Cameras/DVR
Qty	Make	Model Year	Model	System Installed?	Microphone/ PA System	AVA Installed?	Make/Model	Make/Model	Make/Model
3	New Flyer	1999	40’ LF Diesel	Avail	Yes	Yes	Diamond (manual)	Luminator /	SEON NX-16
4	Gillig	2011	29’ LF Diesel	Avail	Yes	Yes	Diamond (manual)	Luminator /	SEON NX-16
4	Gillig	2007	35’ LF Diesel	Avail	Yes	Yes	Diamond (manual)	Luminator /	SEON NX-16
2	Gillig	2016	35’ LF Diesel-Electric Hybrid	Avail	Yes	Yes	Diamond (manual)	Luminator /	SEON NX-16
1	Gillig	2016	40’ LF Diesel-Electric Hybrid	Avail	Yes	Yes	Diamond (manual)	Luminator /	SEON NX-16
9	Glaval	2012-2020	22-24’ Cutaways	No	Yes	No	Diamond (manual)	Luminator (x1) Hanover (x1)	SEON NX-16
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* -- Will be upgrading to SEON NX-16 units with wireless capabilities in FY21.

Communications: OTA wave radio, 4G cellular data modem via Digi dual-sim MGR Modem
MDC/VLU GPS receiver: [GM-44-UB?]
Mobile Access Router: Dual-Sim Digi MGR modems

Santa Rosa CityBus

Vehicles				Automatic Passenger Counters (APC)	Automatic Voice Annunciators (AVA)		Farebox	Headsign	Cameras/DVR
Qty	Make	Model Year	Model	System Installed?	Microphone/ PA System	AVA Installed?	Make/Model	Make/Model	Make/Model
4	Gillig	2002	40’ LF	InfoDev DA-200, GW-200	Yes	Yes	Genfare Odyssey	Luminator	MobileView 7000
4	Gillig	2008	29’ LF	InfoDev DA-200, GW-200	Yes	Yes	Genfare Odyssey	Luminator	MobileView 7000
7	New Flyer	2011	DE40LF	InfoDev DA-200, GW-200	Yes	Yes	Genfare Odyssey	Luminator	MobileView 7000
10	New Flyer	2013-2016	XD-40	InfoDev DA-200, GW-200	Yes	Yes	Genfare Odyssey	Luminator	MobileView 7000
4	El Dorado	2018	Axxess	N/A	Yes	Yes	Genfare Odyssey	Luminator	?
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Communications: Motorola (various models) radio, 4G cellular data modem
MDC/VLU GPS receiver: GM-44-UB
Mobile Access Router: None